Math 118 - Dr. Miller - HW #5: Perimeter and Circles

1. Find the total perimeter (include straight sides) of a sector of a circle having the following dimensions; round to the nearest tenth.

    (a) The radius is 8 cm and the sector opens 45°.

    (b) The radius is 2.5 cm and the sector opens 120°.

    (c) The radius is 4.1 cm and the sector opens 135°.

    (d) The radius is 8 cm and the sector opens 12°.

    (e) The radius is 3 cm and the sector opens 1°.

2. (a) The diameter of a circle is 5.21 inches. What is its circumference, to the nearest hundredth?

    (b) The radius of a circle is 5.21 inches. What is its circumference, to the nearest hundredth?

    (c) The circumference of a circle is 5.21 inches. What is its diameter, to the nearest hundredth?

    (d) The circumference of a circle is 5.21 inches. What is its radius, to the nearest hundredth?

3. The track used by the race car drivers at Peak Park has two straightaways that are 1.2 miles long each while the semicircular curves on either end have a diameter of 0.2 miles. What is the length of one lap of the track, to the nearest tenth of a mile?

4. (a) If the radius of a circle triples, in what way will its circumference change? Be specific about the amount and nature (add, subtract, multiply, etc.) of the change.

    (b) If the diameter of a circle increase by adding 1, in what way will the circumference change? Again, be specific about the amount and nature of the change.

Answers:

1. (a) 22.3 cm

    (b) 10.2 cm

    (c) 17.9 cm

    (d) 17.7 cm

    (e) 6.1 cm

2. (a) 16.37 inches

    (b) 32.74 inches

    (c) 1.66 inches

    (d) 0.83 inches

3. 3.0 (yes, you need that tenths' digit to show that you rounded!) miles

4. (a) The circumference also triples (multiplies by 3).

    (b) The circumferences increases by adding π.